

DETAILED ACTION

1. This action is responsive to interview filed 4/7/08.

Response to Amendment

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-20 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Burdorf et al (5,795,688) in views of Rao et al (2002/0088952).

Regarding claims 1, 3, 4, 10, 15 and 20 Burdorf discloses,

Acquiring at least one digitized image of at least one mask pattern on the wafer (fig. 2, 18, note col. 3 lines 40-49, examiner interprets the aerial image as acquired digitized image of mask pattern on the wafer);

Converting at least one mask database file for a mask corresponding to the mask pattern into at least one inspection file specific to an inspection tool through an aerial

image based processing (fig. 2, 30 note col. 4 lines 8-10, examiner interprets generated simulated aerial image as converted masked file for mask pattern into inspection file through processing aerial image);

Comparing the digitized image (18) and the inspection file (30) by the inspection tool (note col. 4 lines 10-11); and

Detecting disallowed mask patterning process-induced defects by examining differences (note col. 4 lines 11-12, discrepancies are detected).

Burdorf does not clearly disclose actual feature on the wafer taken directly from the wafer. Rao discloses actual feature on the wafer taken directly from the wafer (note fig. 8 and 10 page 11 paragraph 110 and 111 and page 12 paragraph 120, camera captures actual image feature directly from the wafer). Burdorf and Rao are combinable because they are from the same field of endeavor. Therefore it would have been obvious to one of ordinary skill in the art to disclose actual image feature on the wafer to be taken directly from the wafer in the system of Burdorf as evidenced by Rao. The suggestion/motivation for doing so would have been a faster wafer inspection system (note page 2 paragraphs 12)

Regarding claim 2 Burdorf discloses,

Wherein the design database file is processed with optical proximity correction features (note col. 1 lines 39-41 col. 3 lines 25-30 and 54-57).

Regarding claim 6 Burdorf discloses,

Detecting a proximity trend with the portion of the wafer (note col. 3 lines 54-55)

Regarding claims 7-9, 11-14 Burdorf discloses,

Wherein the detecting further includes detecting defects induced by one or more processes using the mask (note col. 4 lines 20-26).

Regarding claim 16 Burdorf discloses,

Wherein the defects includes critical dimension errors (note fig. 2, 34).

Regarding claim 17 Burdorf discloses,

Further includes information about critical dimension distribution (note fig. 2, 34 and col. 4 lines 11-12).

Regarding claims 5 and 18 Burdorf discloses,

Further comprising bias fitting the digitized image and/or the inspection file (note col. 3 lines 40-50)

Regarding claim 19 Burdorf discloses,

Wherein the detecting further includes setting on or more error detection thresholds for avoiding false defects (note col. 3 lines 62-63).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory M. Desire whose telephone number is (571) 272-7449. The examiner can normally be reached on M-F (6:30-3:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

G.D.
April 14, 2008

/Gregory M. Desire/
Acting Examiner of Art Unit 2600